



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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NAS BRUNSWICK
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GOVERNOR

June 30, 1999

EDWARD O. SULLIVAN

COMMISSIONER

Mr. Emil Klawitter
Code 1823 EK
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, PA 19113-2090

Re: Draft Long-Term Monitoring Plan, Site 9
Naval Air Station, Brunswick, Maine"

Dear Mr. Klawitter:

The Department of Environmental Protection (DEP or Department) has reviewed the report entitled Draft Long-Term Monitoring Plan, Site 9 (Neptune Drive Disposal Site), dated May 1999, prepared by EA Engineering, Science and Technology. Based on that review the Department has the following comments and issues.

General Comments:

1. Please change "monitored natural attenuation" to "natural attenuation with long-term monitoring" throughout this document to be consistent with the PRAP language. As has been discussed at RAB meetings, Site 9 monitoring does not conform to EPA's definition of monitored natural attenuation.

Specific Comments:

2. Purpose and Scope, Section 1.1, page 1-1, 1st para:

"The purpose of the Long-Term Monitoring Program is to identify monitoring that will be conducted to verify the effectiveness of the selected remedial action, monitored natural attenuation, at Site 9."

See Comment 1 above.

3. Purpose and Scope, Section 1.1, page 1-2, 2nd para:

This section should be structured like the draft LTMP for Sites 1,3, and the Eastern Plume (October 1998 version). Starting with the first paragraph on page 1-2, keep the first paragraph. The entire second paragraph and 4 bullets should be eliminated. Instead of the LTMP objective, the goals as written in the Proposed Remedial Action Plan should be included. The Department suggest the following language: *The goals of the Long Term Monitoring Program are to obtain data necessary to document the long-term trends in environmental media at Site 9. These goals are as follow:*

- Monitor changes in the plume boundaries and potential migration pathways;
- Monitor effectiveness of the remedial action for the protection of human health and the environment.
- Evaluate whether the inactive landfill contents are impacting groundwater

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- *Monitor the volatile organic compound contamination to evaluate the effectiveness of natural attenuation and determine trends with time.*
- *Monitor impact to the environment due to Site 9.*

Currently, a Final Record of Decision is being prepared for Site 9. The components of the LTMP have been defined based on the Interim Ground Water Record of Decision for Site 9. The results of the monitoring program will be used to revise this monitoring program and to assess the success of the proposed remedy is required as part of the Installation Restoration program activities at Site 9.
(Keep the last sentence.)

4. Site Hydrogeology, Section 1.3.2, page 1-4, 2nd para:

This section needs to be expanded to include a discussion of the following:

- the effect of the impoundments on the stream primarily has been to redirect Site 9 groundwater discharge to the lower pond near the confluence of the north and south branches;
- the groundwater flow pathway leads upgradient to the NEX;
- the pathway has shifted in recent years westward between the NEX and Site 9;
- and the addition of a new monitoring well to bound the westward shift.

5. Long-Term Monitoring, Section 1.3.4, page 1-5:

For clarity, it should be stated here that the LTMP has two components: the gauging of water elevations in wells and ponds, and water and sediment sampling for contaminants.

6. Sampling Locations, Section 1.4.1, page 1-5, 1st para:

- a. In the first sentence, the first "reported" should be deleted.
- b. In the second sentence, change "...lack of detections and close locations..." to "...*lack of detections and/or close locations...*".
- c. Modify the third sentence as follows: "*Only three wells (...) will be sampled for Target Analyte List elements as only these wells are immediately downgradient of the landfill.*"

7. Sampling Locations, Section 1.4.1, page 1-5, 1st para:

As discussed at technical meetings, Monitoring Well NASB-077 should continued to be monitored (at least for a while) until enough rounds have been analyzed to determined that vinyl chloride is below the Maximum Exposure Guidelines. Section 3.1.1 and Table 1-1 must also be revised to reflect keeping MW-NASB-077.

8. Sampling Locations, Section 1.4.1, page 1-6, 1st para:

The Department still feels strongly that an additional sediment sampling location is necessary. To ensure that contaminated groundwater is not discharging to the northern branch of the unnamed stream (now partially impounded), sediment stations must be sampled for VOCs, SVOCs, DRO, and metals. SVOCs and DRO sampling should be run for at least one year to better determine the type of contaminant present. Surface water sampling should continue to target only VOCs. The Department cannot concur with this revised monitoring plan unless this is done.

Our rationale for adding a SW/SED station to the LTMP is as follows:

Of particular concern to DEP are the locations of SW-10, SW-11, and SW-12 along the unnamed drainage. VOCs have been analyzed at these surface water stations at Site 9 from Monitoring Event 1 in March 1995 to Monitoring Event 14 in April 1999. Stations SW-11 and SW-12 (along with four other stations) were discontinued after the July 1997 sampling (Monitoring Event 9); the reason given was that the new dams caused these locations to be flooded and ample data were available. However, beginning with Monitoring Event 8, toluene was detected at SW-11 (until cessation of sampling in 1997) and 1,2-dichloroethene has been consistently detected at SW-10 each event since.

VOCs and SVOCs, including vinyl chloride, 1,2-dichloroethene, and trichloroethene, were found in past sediment samplings at stations SW-10 and SW-11, but not at SW-12. Sediment sampling at SW-11 and SW-12 were also discontinued after Monitoring Event 9 in July 1997. Beginning with Monitoring Event 8, concentrations of a number of previously detected SVOCs increased substantially (up to nearly two orders of magnitude) at SW-10 and SW-11. An exception is that at SW-11, Monitoring Event 6 gave similarly elevated readings.

In the Department's opinion, it is unlikely that the above contaminants in surface water and sediments are due largely to non-point base runoff. Instead, we believe that the now documented shifting of groundwater flow lines probably due to air sparging at the NEX and the creation of detention ponds in the headwaters of the unnamed stream is altering the discharge of contaminated groundwater to the stream/ponds. The very low dissolved oxygen content in the shallow groundwater may also be a contributing factor.

In summary, a change in contaminant distribution in both media is suggested by the results of Monitoring Events 8 and 9, but the discontinuation of stations SW-11 and SW-12 occurred at an inopportune time, in retrospect. While the accurate quantification of VOCs in stream water is problematic, the possible accumulation of contaminants in sediment under the new groundwater/surface hydraulic regime can be, and must be, monitored. Tentatively, DEP recommends that the new sampling station be established at the location of SW-920 on the north branch of the unnamed stream (see Figure 3-1 of the Source Investigation). Sampling under a few feet of ponded water should not pose much of a problem.

9. Staff Gauge Monitoring, Section 1.4.4, page 1-6, 2nd sentence:

Change: "will be" to "has been".

10. Regulatory Framework, Section 2, page 2-1:

a.) "Because the selected remedy (monitored natural attenuation) leaves contaminants onsite and does not immediately allow for unlimited use and unrestricted access, a 5-year statutory review is appropriate."

Isn't the 5-year review required? The Department recommends the following language. *Because the selected remedy (natural attenuation with long term monitoring) leaves contaminants onsite and does not immediately allow for unlimited use and unrestricted access, a 5-year statutory review is required.*

b.) "This LTMP revision will allow the Navy to collect data to conduct 5-year reviews."

This doesn't make sense. DEP suggests: "The LTMP will allow ..."

11. Sampling Frequency, Section 3.1.5, page 3-2, 2nd para:

"If compound concentrations remain consistent or decrease over time, the monitoring frequency may be changed with approval by EPA and MEDEP."

While it is not anticipated, compound concentrations could increase over time, therefore DEP suggests the following language which allows for all eventualities: *Depending on the long term trends of the compound concentrations, monitoring frequency may be changed with approval by the EPA and MEDEP.*

12. Analytical Parameters and Procedures, Section 3.3, page 3-3, 3rd bullet:

Dissolved oxygen and Eh should be removed from an optional status, and be included as part of the standard Site 9 suite of field measurements. This is because these tests are integral components of monitoring of natural attenuation and if a rigorous evaluation of natural degradation should be undertaken in the future, these data will be valuable. Let's make sure that DO and Eh will not be dropped, and formally recognize them as important parameters.

13. Analytical Parameters and Procedures, Section 3.3, page 3-3, 4th bullet:

"Water elevations will be recorded prior to sampling site monitoring wells."

This subject does not belong under the section heading. Please delete this bullet.

14. Program Modifications, Section 3.3.1, page 3-3:

A reduction or elimination of monitoring points included in the LTMP may be appropriate if contamination concentrations are consistently below drinking water criteria ..."

This statement needs to be revised to include the possibility of increasing or modifying the monitoring points. DEP suggests the following language: *Modifications to the monitoring network included in the LTMP may be appropriate if a trend of contamination concentrations change significantly (e.g. four monitoring rounds).*

15. Data Reduction and Data Quality Review, Section 3.3.2, page 3-3, 3rd sentence:

"The findings of the data quality review will be included in the monitoring event report, and will report significant data discrepancies which may affect analytical data usability."

These findings must be summarized in the annual reports, as well. Therefore annual report should also be named in this sentence.

16. Laboratory Quality Assurance and Quality Control, Section 3.3.4, page 3-4:

- a. "The data will be evaluated and reported to the regulatory agencies."

The following rewrite is recommended: *"The data will be evaluated and reported in individual monitoring events and annual reports."*

- b. "The usefulness of the data will depend on the contaminant levels relative to the detection limits during a specific sampling event and the reason for the laboratory's inability to meet the detection limit."

This statement may be construed as applying to all data for each event, whereas only in limited instances should data quality be an issue. To provide a "backdrop", the following should be inserted to the front of the above text: *"It is anticipated that, occasionally, a small fraction of monitoring event data will have detection limit issues; when this happens ..."*

17. Appendix A.2.4, Sampling Procedure, 2nd set of bullets, 2nd bullet:

Prior to accepting this LTMP, the Department would like to discuss options for changing the depth that samples are collected in surface water bodies. The most environmental value would be gained from samples collected within 0.5 feet of the stream bed. This concept appears to be supported by experiences with diffusion sampling data presented at recent conferences.

18. Appendix B, 2.3, Data Uses, page 2-1:

The additional goals of the monitoring plan (see comment 3 above) need to be included here.

19. Appendix B, Table 5-2, note f:

Note f indicates that a secondary method for vinyl chloride is being considered. Please specify the analysis technique that will be used to assure detection of vinyl chloride at the State Maximum Exposure Guideline.

20. Appendix B, Table 8-1:

In the instrument maintenance section, the GC maintenance portion appears to be missing. Please provide.

21. Attachment A-1, Summary of Laboratory ..., first page:

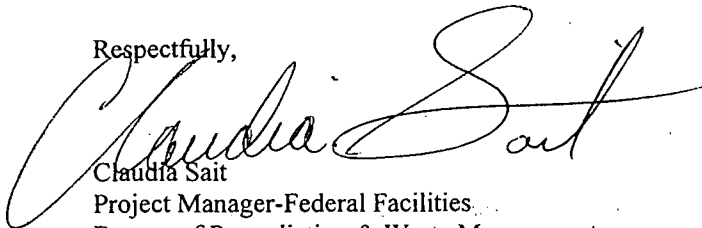
The holding time does not include flagging the report. Either reports should be flagged, or some other mechanism should be worked out to assure samples have been analyzed within the holding time.

22. Attachment A-1, Summary of Laboratory ...:

Laboratory control samples and matrix spikes for method 8260B should be fortified with analytes of concern. The history at this site indicates the presence of vinyl chloride, 1,2 dichloroethene, and 1,1 dichloroethane. Yet none of these analytes are included in the QC samples. Control limits should also be set for these analytes in the QC samples.

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713.

Respectfully,



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